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PART B
SOLAR - GEOPHYSICAL DATA

ISSUED
MARCH 1964

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

SOLAR - GEOPHYSICAL DATA

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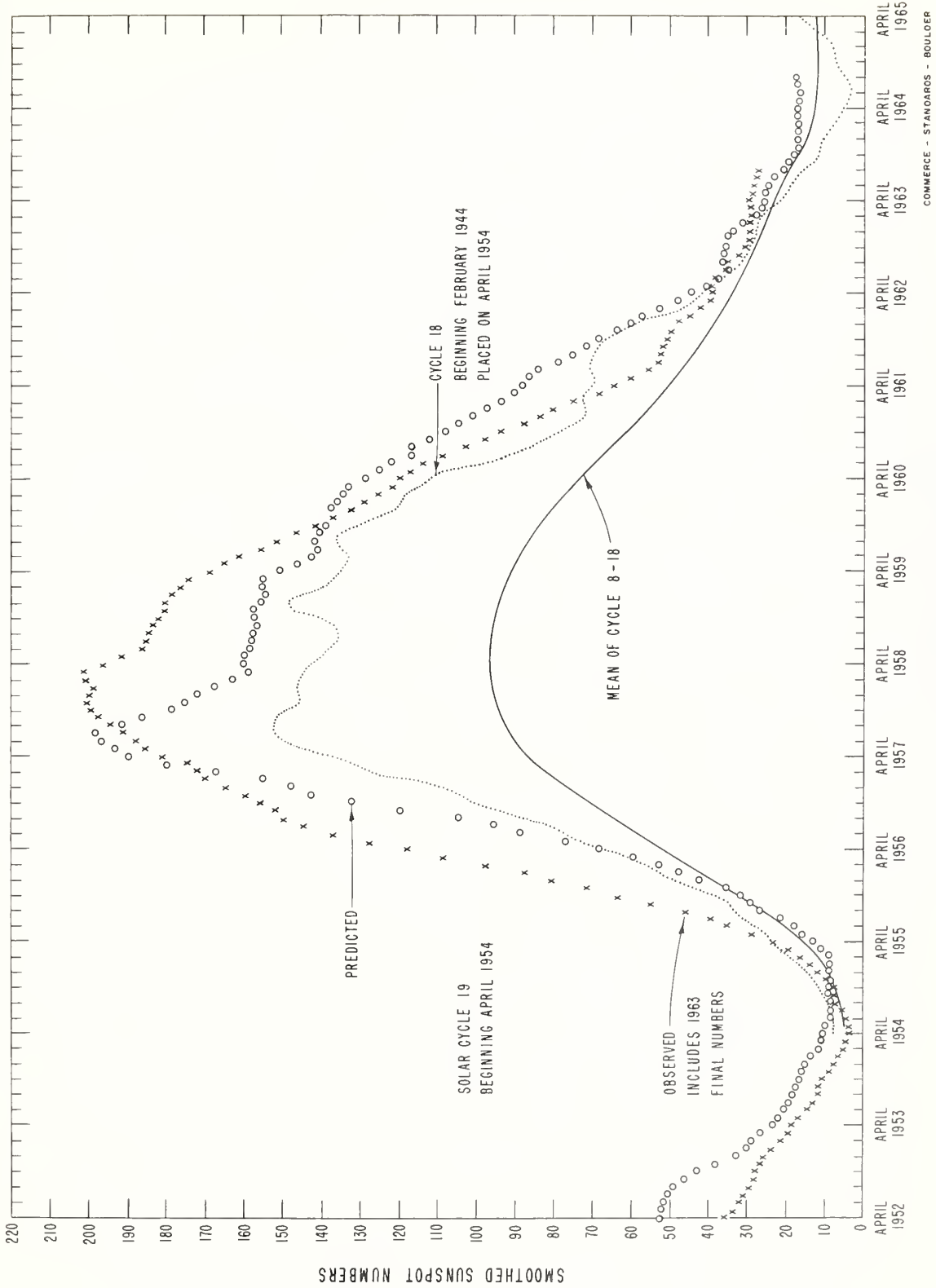
- (a) IQSY Alert Periods - February 1964

The descriptive text was republished November, 1963.

DAILY SOLAR INDICES

Jan. 1964	American Relative Sunspot Numbers R_A'
1	0
2	1
3	0
4	1
5	7
6	19
7	20
8	16
9	4
10	4
11	6
12	6
13	19
14	25
15	25
16	11
17	2
18	1
19	10
20	16
21	14
22	14
23	12
24	14
25	14
26	13
27	14
28	26
29	24
30	17
31	4
Mean:	11.6

Feb. 1964	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	0	73
2	0	72
3	0	71
4	0	71
5	0	72
6	0	73
7	10	72
8	13	73
9	20	72
10	8	73
11	0	72
12	0	73
13	0	73
14	8	73
15	15	73
16	16	73
17	16	74
18	8	76
19	8	76
20	23	76
21	39	79
22	41	80
23	54	84
24	44	85
25	30	84
26	34	87
27	30	85
28	34	84
29	23	81
30		
31		
Mean:	16.3	76



PREDICTED AND OBSERVED SUNSPOT NUMBERS

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ZURICH FINAL RELATIVE SUNSPOT NUMBERS

1963

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	23	30	0	15	23	31	30	65	20	0	45	28
2	29	25	0	25	22	26	22	55	25	7	52	31
3	34	44	8	28	24	15	37	53	34	9	43	30
4	35	53	14	17	20	13	22	51	43	8	37	30
5	23	47	22	23	26	23	9	50	42	0	29	28
6	8	50	32	50	43	8	9	53	31	15	13	25
7	7	48	35	50	46	29	9	38	9	20	10	17
8	8	40	29	63	55	54	10	23	14	32	11	13
9	7	32	32	55	48	68	17	22	15	37	9	32
10	8	21	34	59	64	82	9	20	23	32	0	27
11	8	18	23	48	64	82	10	9	22	40	8	26
12	8	16	18	63	55	87	10	0	28	39	11	18
13	9	9	17	56	54	82	18	7	40	42	7	10
14	33	16	24	45	56	57	22	13	65	51	7	8
15	44	17	15	50	65	54	19	11	84	49	9	7
16	40	16	8	50	66	33	11	18	85	52	16	7
17	40	18	13	41	76	27	11	29	81	50	24	8
18	21	16	19	34	78	25	13	43	73	40	28	17
19	20	20	12	28	68	23	15	36	72	29	25	15
20	16	20	13	19	58	19	11	36	73	37	28	17
21	16	20	13	10	49	19	19	50	77	35	30	14
22	7	20	16	0	37	7	19	68	70	45	34	13
23	17	22	17	0	24	15	25	64	54	50	36	9
24	15	20	19	0	28	24	17	50	38	51	35	16
25	17	16	10	0	18	29	25	37	25	53	32	8
26	7	11	16	0	9	34	16	29	13	52	23	7
27	14	17	15	0	18	31	23	16	0	38	23	0
28	34	0	7	7	36	24	7	21	9	24	21	0
29	25		12	16	32	30	24	16	0	54	27	0
30	23		17	26	37	27	55	23	0	58	28	0
31	18		19		35		65	24		45		0
Mean	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9

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CALCIUM PLAGE AND SUNSPOT REGIONS

IIa

FEBRUARY 1964

Feb. 1964	LAT.	MCMATH PLAGE NUMBER	RETURN OF REGION	CALCIUM PLAGE DATA						SUNSPOT DATA		
				CMP VALUES		HISTORY	AGE (ROTA- TIONS)	DATE FIRST SEEN(1)	DURA- TION (DAYS)(2)	CMP VALUES		HISTORY
				AREA	INT					AREA	COUNT	
Jan. 31.0 31.8	S23 S35	7127 (2) 7116 (2)	New New	(300) (100)	(1) (2)	b - ℓ b - d	1 1	2/5 1/28	1 1			
Feb. 01.0 01.1 03.2 03.5 03.8	N28 N13 N45 N20 N04	7120 7132 (2) 7124 (2) 7122 7121	New New New 7095 New	300 (200) 200 100 600	1.5 (1) 1.5 1.5 1.5	b \nearrow ℓ b - ℓ b - d ℓ / ℓ ℓ \nearrow ℓ	1 1 1 8 1	1/29 2/5 2/4 1/29 1/29	7 1 1 10 11			
03.8 05.6 05.7 06.1 06.1	S21 S09 N08 N27 N47	7128 (2) 7133 7134 7135 7125 (2)	New New New New New	200 400 400 300 100	2 3 2 2 2	b - d b / ℓ b \searrow d b \searrow d b - d	1 1 1 1 1	2/5 2/6,7 2/7 2/7 2/4	1 5 2 3 1			
06.7 07.2 07.7 09.6 09.7	N09 N01 S20 N16 N05	7129 7131 (2) 7136 7126 7144	New New New New New	300 200 200 (200) 100	1 2 1.5 (2) 2	b \nearrow d b - d b \nearrow d ℓ - d b \wedge d	1 1 1 1 1	2/5 2/5 2/7 2/3 2/10	3 1 2 3 3			
10.1 10.3 10.1 10.5 10.7	N31 S10 S05 S15 N11	7140 (2) 7149 7137 (2) 7146 (2) 7130	New New New New 7102	100 (200) (400) 300 400	2 (1.5) (2.5) 1 2	b - d b \searrow ℓ b - d b - d ℓ \searrow d	1 1 1 1 6	2/9 2/14 2/7 2/11 2/4	1 2 1 1 ≥ 9			
10.7 11.3 11.4 11.9 12.3	S11 N20 S29 S15 S08	7145 (2) 7141 7142 (2) 7148 (2) 7138 (2)	New New New New New	100 200 100 100 (400)	1.5 1.5 2 1.5 (1.5)	b - d b - d b - d b - d b - d	1 1 1 1 1	2/10 2/9 2/9 2/12 2/7	1 2 1 1 1			
12.7 12.6 12.7 13.9 14.5	N10 S28 N26 N02 S15	7139 7143 (2) 7150 7147 7156 (2)	(3) New New (4) New	400 (100) 100 500 (200)	1.5 (2) 2 1.5 (1.5)	ℓ \nearrow d b - d b \wedge ℓ b \nearrow ℓ b - ℓ	6 1 1 1 1	2/10 2/9 2/14 2/11 2/17	>10 1 4 >7 1			
15.8 17.3 18.9 19.6 20.8	N04 N08 S39 S09 N16	7157 (2) 7151 7158 (2) 7152 7155 (2)	New New New New New	200 600 200 (300) (200)	1.5 1.5 1.5 (1.5) (2)	b - d b \nearrow d b - d ℓ - d b - d	1 1 1 1 1	2/17 2/14 2/17 2/14 2/16	1 ≥ 4 1 ≥ 7 1			
20.9 21.7 22.6 22.6 23.9	S06 N09 N13 S19 N02	7153 7154 7170 (2) 7159 (2) 7168	7113 7108 New New New	1400 2100 (200) (100) (400)	3 3.5 (2.5) (2) (2.5)	ℓ \nearrow ℓ ℓ / ℓ b - ℓ ℓ - d b / ℓ	2 2 1 1 1	2/14 2/14 2/28 2/17 2/26	13 14 1 1 4	60 160	1 5	ℓ \searrow ℓ b \wedge ℓ
24.0 24.5 25.6 26.3 26.9	S01 N08 N12 S12 N09	7160 (2) 7161 7169 (2) 7166 7162	New 7115 New New New	(200) 2500 (100) 400 (300)	(1.5) 3.5 (1.5) 1.5 (1)	b - d b / ℓ b - d b \nearrow d ℓ - d	1 1 1 1 1	2/20 2/20 2/27 2/24 2/21	1 11 1 2 2	570	12	ℓ / ℓ
27.9 28.0 29.0 29.7	S09 S03 N25 S05	7163 7172 7164 7165	New New (5) New	(200) (600) 800 (200)	(1.5) (1.5) 2 (1)	b - d b \searrow d ℓ \searrow ℓ ℓ - d	1 1 1 1	2/23 2/29 2/23 2/23	2 2 13 3			

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- (1) Due to inclement weather conditions, no calcium plage data were secured at the McMath-Hulbert Observatory on February 6, 13, 18 and 19.
 (2) These very small and ephemeral plages last for only one day.
 (3) Part of 7104.
 (4) New - in same position as old 7105.
 (5) New - in position of 7120.

MT. WILSON MAGNETIC CLASSIFICATIONS OF SUNSPOTS

FEBRUARY 1964

Feb. 1964	TIME MEAS. UT	LAT	MER DIST	TYPE	Feb. 1964	TIME MEAS UT	LAT	MER. DIST	TYPE
1-6	No Spots				24	1630	S04 N10 N07	W56 W42 W03	α p β y β
7	1640	S08	W25	β					
8	1715	S09	W40	β p	25-26	No Obs.			
9	2155	S08	W57	β p	27	1620	N02 N09	W47 W44	β β p
10	1805	S07	W69	β					
11-13	No Spots				28	1810	N02 N10 N06 S07	W63 W58 E25 E45	β f β p α p α p
14-20	No Obs.								
21	1640	S04 N10 N08	W16 W01 E41	α p β α p	29	1810	N02 N10 N06 N07	W78 W76 E11 E32	α f α p α p α p
22-23	No Obs.								

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PROVISIONAL CORONAL LINE EMISSION INDICES

FEBRUARY 1964

CMP Feb 1964	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁
1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	5	7	16	20	3	4	19	20	5	6	14	16	8	12	11	16
3	9	11	10	12	5	8	12	16	5	8	23	26	8	11	17	20
4	x	x	19a	27a	x	x	20a	29a	x	x	x	x	x	x	x	x
5	5	8	21	24	3	6	18	22	x	x	x	x	x	x	x	x
6	x	x	x	x	x	x	x	x	13	22	33	52	10	11	25	33
7	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8	x	x	x	x	x	x	x	x	4	6	15	16	10	12	13	16
9	12	14	11	16	7	9	9	12	6	7	17	20	13	16	11	15
10	x	x	x	x	x	x	x	x	3	4	9	12	5	6	7	8
11	x	x	x	x	x	x	x	x	4	5	12	13	11	12	6	9
12	x	x	x	x	x	x	x	x	4	7	13	18	13	16	7	8
13	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
14	12	15	9	12	4	9	16	18	3	5	8	9	5	6	6	8
15	x	x	x	x	x	x	x	x	8	11	5	9	7	8	6	7
16	10	17	13	16	3	5	11	14	4	5	15	18	4	4	10	13
17	9	17	17	26	4	6	14	15	x	x	x	x	x	x	x	x
18	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
19	x	x	x	x	x	x	x	x	4	7	44a	88a	5	9	46a	83a
20	29	50	31	57	19	64	31	76	8	18	7	9	13	29	10	17
21	x	x	x	x	x	x	x	x	12	20	28	33	38	87	46	80
22	26	53	18	23	7	11	12	14	x	x	x	x	x	x	x	x
23	15	28	17	24	4	5	14	17	4	6	36	41	33	61	76	136
24	5	10	8	12	3	3	8	9	9	19	x	x	19	36	x	x
25	7	12	16	40	3	5	9	14	x	x	x	x	x	x	x	x
26	5	6	15	22	4	6	10	14	x	x	x	x	x	x	x	x
27	x	x	x	x	x	x	x	10	5	6	7	8	9	18	8	13
28	9	21	12	24	3	5	8	10	x	x	x	x	x	x	x	x
29	19	24	22	42	21	24	4	8	x	x	x	x	x	x	x	x

x = no observations

* = yellow line emission

a = index computed from low weight data

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SOLAR FLARES

FEBRUARY 1964

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURATION — MINUTES	IM- POR- TANCE	OBS COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX LAT	MER DIST	MATH PLACE REGION				TIME U T	MEAS AREA Sq Deg.	CORR AREA Sq Deg.	MAX WIDTH Ha		MAX INT %
ATHENES	FEB 1964														
	01	0515	0805												
	01	1110	1315												
	01	2355	2400												
	02	0030	0815												
	02	1005	1015												
	02	1110	1300												
	03	0035	0205												
	03	0235	0330												
	03	0430	0810												
	03	0850	1010												
	03	1050	1400												
	03	1620	1625												
	03	1945	2340												
	04	0050	0110												
	04	0200	0810												
	04	0825	0845												
	04	1154 E	1211					1-	3	1155	.60	1.00			
	04	1220	1435												
	04	1505	1515												
	04	1535	2400												
	05	0000	0035												
	05	0050	0130												
	05	0140	0630												
	05	0935	1000												
	05	1140	1145												
	05	1200	1300												
	05	1410	1420												
	05	2105	2115												
	05	2355	2400												
	06	0115	0130												
	06	0220	0730												
	06	1030	1345												
	06	1820	1910												
	06	2000	2025												
	06	2105	2115												
06	2145	2340													
07	0200	0230													
07	0625	0715													
07	0740	0755													
07	0920	0930													
07	0950	1000													
07	1005	1020													
07	1030	1115													
07	1125	1300													
07	1310	1410													

SOLAR FLARES

FEBRUARY 1964

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM FOR- TANCE	OBS COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	MAX PHASE	APPROX.		MATH PLACE REGION				TIME	MEAS AREA Sq Deg	CORR. AREA Sq Deg	MAX WIDTH H _g		MAX. INT °
					LAT	MER DIST										
[ARCTRI MANILA	FEB 1964															
	08	0325	0530	NO FLARE	PATROL											
	08	0600	0725	NO FLARE	PATROL											
	08	0825	0900 D		S08 W35											
	08	0834	0848	0839	S08 W33											
	08	1005	1255	NO FLARE	PATROL											
MANILA	08	2355	2400	NO FLARE	PATROL											
	09	0000	0105	NO FLARE	PATROL											
	09	0120	0600	NO FLARE	PATROL											
	09	0725	0734	0728	N19 E28											
	09	1100	1300	NO FLARE	PATROL											
	10	0130	0155	NO FLARE	PATROL											
SAC PEAK	10	0215	0615	NO FLARE	PATROL											
	10	0700	0810	NO FLARE	PATROL											
	10	0835	0840	NO FLARE	PATROL											
	10	1005	1015	NO FLARE	PATROL											
	10	1025	1135	NO FLARE	PATROL											
	10	1140	1250	NO FLARE	PATROL											
[SAC PEAK LOCKHEED	10	1907	1925	1917	S08 W75											
	10	2000	2055	NO FLARE	PATROL											
	10	2101	2109	2103	N08 E00											
	10	2101	2118	2105	N04 E00											
	11	0145	0215	NO FLARE	PATROL											
	11	0330	0700	NO FLARE	PATROL											
	11	0830	0835	NO FLARE	PATROL											
	11	0840	0915	NO FLARE	PATROL											
	11	1000	1235	NO FLARE	PATROL											
	11	1335	1435	NO FLARE	PATROL											
	11	1715	2355	NO FLARE	PATROL											
	12	0055	0435	NO FLARE	PATROL											
	12	0455	0540	NO FLARE	PATROL											
	12	0715	0930	NO FLARE	PATROL											
	12	0955	1300	NO FLARE	PATROL											
	12	1735	1745	NO FLARE	PATROL											
	12	1800	1805	NO FLARE	PATROL											
	12	1810	1900	NO FLARE	PATROL											
	12	2155	2400	NO FLARE	PATROL											
	13	0000	0015	NO FLARE	PATROL											
	13	0030	0120	NO FLARE	PATROL											
	13	0150	0505	NO FLARE	PATROL											
	13	0530	0545	NO FLARE	PATROL											
	13	0600	0610	NO FLARE	PATROL											
	13	0640	0650	NO FLARE	PATROL											
	13	1030	1110	NO FLARE	PATROL											
	13	1200	1220	NO FLARE	PATROL											
	13	1225	1320	NO FLARE	PATROL											
	13	1325	1330	NO FLARE	PATROL											
	13	1325	1330	NO FLARE	PATROL											

SOLAR FLARES

FEBRUARY 1964

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURATION — MINUTES	IM- POR- TANCE	OBS. COND.	TIME — U T	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX LAT.	APPROX MER DIST					MEAS. AREA Sq Deg	CORR AREA Sq Deg	MAX WIDTH He		MAX INT °
CAPRI S	FEB 1964													
	13	1350	1355	NO FLARE	PATROL									
	13	2355	2400	NO FLARE	PATROL									
	14	0045	0115	NO FLARE	PATROL									
	14	0455	0615	NO FLARE	PATROL									
	14	0655	0700	NO FLARE	PATROL									
	14	0900	0930	NO FLARE	PATROL									
	14	0950	1050	NO FLARE	PATROL									
	14	1110	1115	NO FLARE	PATROL									
	14	1120	1200	NO FLARE	PATROL									
	14	1205	1255	NO FLARE	PATROL									
	14	1325	1330	NO FLARE	PATROL									
	14	1410	1427	1420	N10 E90	7154	17 D	1	1	1420	1.00			
	14	2100	2150	NO FLARE	PATROL									
	14	2155	2330	NO FLARE	PATROL									
	15	0025	0715	NO FLARE	PATROL									
	15	0730	0735	NO FLARE	PATROL									
	15	0740	0820	NO FLARE	PATROL									
	15	0825	0855	NO FLARE	PATROL									
	15	0930	1015	NO FLARE	PATROL									
	15	1030	1045	NO FLARE	PATROL									
	15	1100	1150	NO FLARE	PATROL									
	15	1155	1205	NO FLARE	PATROL									
	15	1210	1235	NO FLARE	PATROL									
	15	1255	1355	NO FLARE	PATROL									
	15	2355	2400	NO FLARE	PATROL									
	16	0050	0545	NO FLARE	PATROL									
	16	0630	0830	NO FLARE	PATROL									
	16	0855	0925	NO FLARE	PATROL									
	16	0945	0950	NO FLARE	PATROL									
	16	1005	1355	NO FLARE	PATROL									
	16	1930	1935	NO FLARE	PATROL									
	16	1950	2000	NO FLARE	PATROL									
	17	0040	0125	NO FLARE	PATROL									
	17	0530	0715	NO FLARE	PATROL									
	17	0815	1245	NO FLARE	PATROL									
17	1315	1320	NO FLARE	PATROL										
17	1445	1450	NO FLARE	PATROL										
17	1455	1500	NO FLARE	PATROL										
17	1505	1510	NO FLARE	PATROL										
17	1540	1545	NO FLARE	PATROL										
17	1555	1610	NO FLARE	PATROL										
17	1615	1620	NO FLARE	PATROL										
17	2350	2355	NO FLARE	PATROL										
18	0640	0700	NO FLARE	PATROL										
18	0915	1010	NO FLARE	PATROL										
18	1035	1355	NO FLARE	PATROL										

COMMERCE • STANDARDS • BOLDER

SOLAR FLARES

FEBRUARY 1964

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			IM. POR- TANCE	DURA- TION — MINUTES	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	MER. DIST.	M. MATH. PLACE REGION				TIME U T	MEAS. AREA Sq Deg	CORR. AREA Sq Deg	MAX WIDTH H _z	
MANILA	19 FEB 1964	0213	0220	0215	N09 E34		1-		2	0215	.17	.19		
	19	0245	0310	NO FLARE	PATROL									
	19	0410	0510	NO FLARE	PATROL									
	19	0900	1400	NO FLARE	PATROL		1-		C		.54	.97		15
SAC PEAK	19	1709	1728	1717 U	N08 E68									
	20	0615	0645	NO FLARE	PATROL									
	20	1620	1625	NO FLARE	PATROL		1-		C	1805	.29	.40		
	20	1802	1808 E	1805	N09 E54									
OTTAWA	20	1900	2400	NO FLARE	PATROL									
	21	0000	0005	NO FLARE	PATROL		1-		2					
	21	0919	0938	1025	N10 E04		1+	19	2	1025	1.70	2.50		
	21	1011 E	1036 D		N07 E47	7161	1+	22 D	3	1023	1.60	5.00		
UCCLE	21	1015 E	1023 D		N07 E45	7161	1+	8 D	3	1023	1.60	2.30		
	21	1017 E	1040		N08 E45	7161	1+	23 D	3	1020			1.50	
	21	1150	1202		N09 E02		1-		3					
	21	1447	1452	1451	N11 E01		1-		3					
UCCLE	21	1515	1517		N08 E46		1-		1					
	21	1515	1545	1525 U	N07 E43		1-		C	1528	.68	.80		17
	21	1522	1535	1528	N08 E43	7161	1-		1		.20	.20		
	21	2350	2400	NO FLARE	PATROL									
ARCETRI	22	0330	0715	NO FLARE	PATROL		1-		3	0936	.40	.50		
	22	0936 E	0941 D		N07 E29		1-		3	1000	.40	.50		
	22	1000 E		1019	N07 E29		1-		2					
	22	1016	1021		N08 E28		1-		2					
UCCLE	22	1038	1042		N08 E28		1-		2					
	22	1058	1120		N08 E28		1-		2					
	22	1746	1810	1755	N08 E24	7161	1-		1	1755	.60	.60		
	22	1845	1950	1900	N08 E24	7161	1-		1	1900	.80	.80		
SAC PEAK	22	1858	1927 U	1903	N08 E24		1-		C		.54	.54		17
	22	2203	2230	2215	N10 E20		1-		2	2215	.60	.60		10
	22	2206	2242	2210	N08 E21		1-		C		.89	.89		17
	22	2315	2345	2320	N10 E20		1-		2	2320	.70	.70		10
LOCKHEED	22	2315	2353	2319	N08 E20		1-		C		1.01	1.01		18
	22	2315	2353	NO FLARE	PATROL									
	22	2355	2400	NO FLARE	PATROL									
	22	2355	2400	NO FLARE	PATROL									
ONOREJOV	23	0050	0630	NO FLARE	PATROL		1	105 D	3	0726			1.80	
	23	0645 E	0830		N08 E19	7161	1	130 D	2	0810	3.40	3.60		
	23	0800 E	1010 D		N08 E15	7161	1		2	1828	.30	.30		10
	23	1818	1842	1828	N09 E10		1-		2	1940	1.00	1.00	1.90	20
LOCKHEED	23	1932	2003	1940	N09 E10		1-		5	1947	1.27	1.32		
	23	1945 E	1955	1945	N08 E10		1-		C		1.07	1.05		17
	23	2134	2155	2137	N06 E12		1-		2	2140	.30	.30		10
	23	2137	2158	2140	N07 E13		1-		C	2140	.30	.30		10
SAC PEAK	23	2227	2255	2237	N08 E07		1-		2	2236	1.49	1.42		17
	23	2227	2255	2237	N08 E07		1-		2		.40	.40		10
	23	2230	2252	2236	N09 E09		1-		2					
	23	2230	2252	2236	N09 E09		1-		2					
LOCKHEED	24	0045	0250	NO FLARE	PATROL									
	24	0045	0250	NO FLARE	PATROL									
	24	0045	0250	NO FLARE	PATROL									
	24	0045	0250	NO FLARE	PATROL									

COMMENTS - STANDARDS - BOULDER

SOLAR FLARES

FEBRUARY 1964

OBSERVATORY	DATE	OBSERVED TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS		MAX WIDTH H ₀	MAX INT °	PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	APPROX. MER DIST.	MATH- FLARE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		
MANILA	FEB 1964													
	24	0330	0600	NO FLARE				1-	1	0603	1.00	1.00		
	24	0600	0606 D	NO FLARE										
	24	0600	0805	NO FLARE										
	24	0830	0910	NO FLARE										
LOCKHEED	24	1010	1310	NO FLARE										
	24	1320	1350	NO FLARE										
	24	1928	2010	NO FLARE				1-	2	1945	.20	.30	10	
	25	0220	0350	NO FLARE										
	25	0405	0615	NO FLARE										
ARCETRI	25	0645	0710	NO FLARE										
	25	0915	1350	NO FLARE										
	25	1910	2100	NO FLARE										
	25	2105	2125	NO FLARE										
	26	0005	0320	NO FLARE										
ARCETRI	26	0345	0545	NO FLARE										
	26	0850 E	1000 D	NO FLARE				1-	3	0920	1.30	1.60		
	26	0925 E	0955 D	NO FLARE				1-	3	0925	.40	.50		
	26	1005	1345	NO FLARE										
	26	1900	2025	NO FLARE										
LOCKHEED	26	2105	2120	NO FLARE										
	26	2150	2400	NO FLARE										
	27	0000	0710	NO FLARE				1-	2	2105	.20	.20	10	
	27	0720	0930	NO FLARE										
	27	0935	1130	NO FLARE										
UCCLE	27	1145	1255	NO FLARE										
	27	2045	2200	NO FLARE										
	27	2355	2400	NO FLARE										
	28	0000	0055	NO FLARE										
	28	0110	0315	NO FLARE										
UCCLE	28	0320	0815	NO FLARE										
	28	0857	0912	NO FLARE				1-	3					
	28	0904	0908	NO FLARE				1-	3					
	28	0935	0954	NO FLARE				1-	3					
	28	0939	0946	NO FLARE				1-	3					
SAC PEAK	28	1145	1150	NO FLARE										
	28	1200	1210	NO FLARE										
	28	1215	1345	NO FLARE										
	28	1352	1445	NO FLARE				1-	C					
	28	1405	1423	NO FLARE				1	1	1414	1.49	1.90	17	
LOCARNO	28	1405 E	1500	NO FLARE				2	S					
	28	1408 E	1412 D	NO FLARE				1-	1					
	29	0150	1345	NO FLARE										
	29	2355	2400	NO FLARE										
	29			NO FLARE										

COMMERCE - STANDARDS - SHOULDER

SOLAR FLARES

FEBRUARY 1961

ATHENS	ATHENS, GREECE	HONOLULU	HAWAII, USA	NERA	NEDERHORST dea BERGH,
BAKOU	PIRCULI, USSR	IKOMASAN	KYOTO, JAPAN		NETHERLANDS
CAPETOWN	ROYAL OBSERVATORY,	KIEV KO	KIEV GAO, USSR	NIZMIR	KRASNAVA PAKHRA, USSR
	CAPE OF GOOD HOPE	KIEV KY	KIEV UNIVERSITY, USSR	SAC PEAK	SACRAMENTO PEAK, N.MEX. USA
CAPRI F	CAPRI, ITALY (GERMAN)	LOCKHEED	LOS ANGELES, CALIF., USA	SALTSJÖBADEN	STOCKHOLM, SWEDEN
CAPRI S	CAPRI, ITALY (SWEDISH)	MCNATH	MCNATH-HULBERT	SCHAUINS	SCHAUINSLAND, GFR
CRIMEE	SIMEIZ, USSR		PONTIAC, MICH., USA	TASHKENT	TASHKENT, USSR
HERSTMONCEU	ROYAL GREENWICH OBSERVATORY,	MOSCOW	MOSCOW-GAISH, USSR	WENDEL	WENDELSTEIN, GFR
	HERSTMONCEUX, ENGLAND				
HTE-PROVEN	HAUTE-PROVENCE		NEW SCHAUIN FREIBURG, GFR		

ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

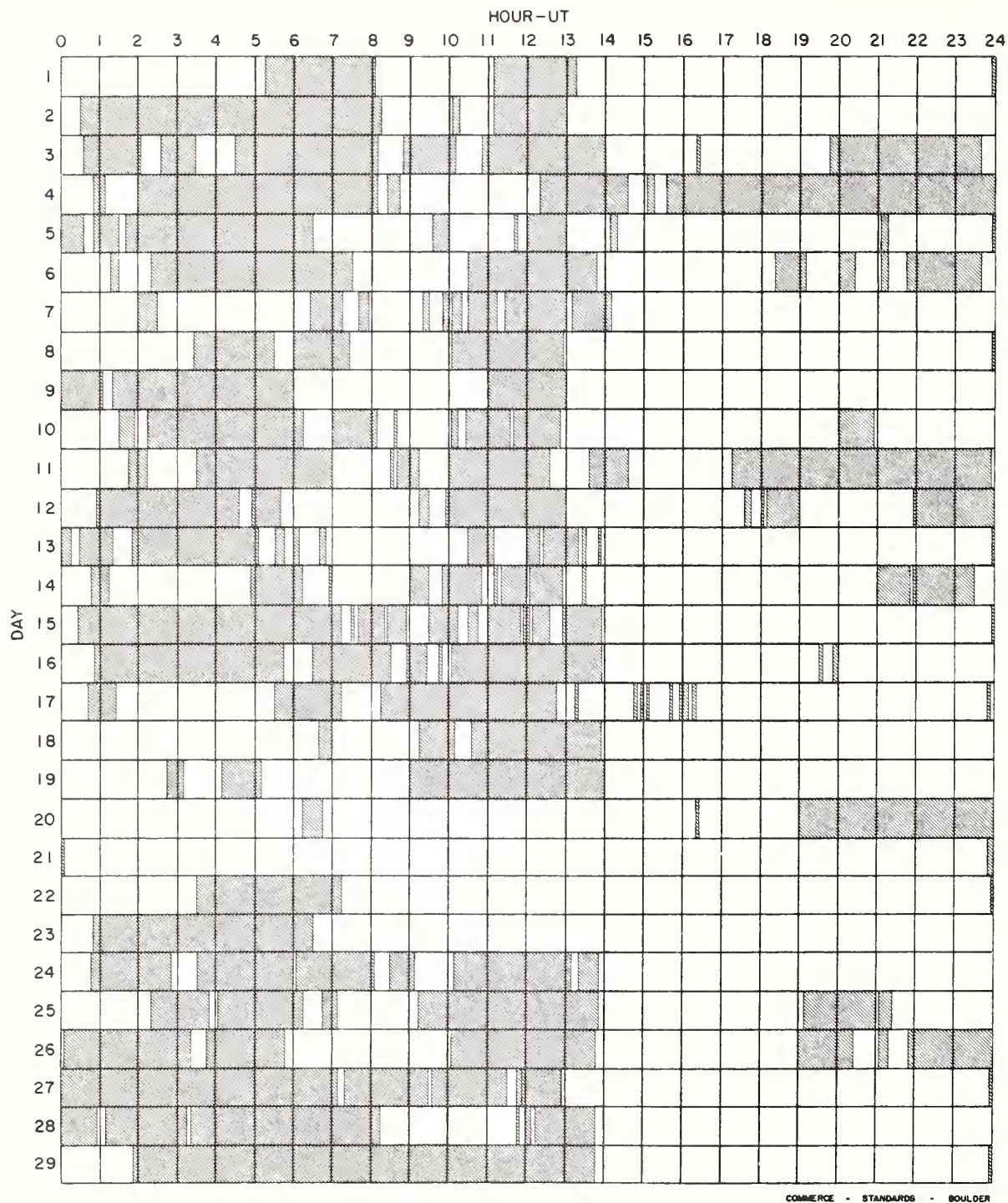
SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

E = LESS THAN D = GREATER THAN U = APPROXIMATE □ = NOT REPORTED.

COMMERCE - STANDARDS - BOULDER

INTERVALS OF NO FLARE PATROL OBSERVATIONS

FEBRUARY 1964



Observatories Included:

Arcetri	Ikomasan	Manila	Sacramento Peak
Athens	Istanbul	Ondrejov	Uccle
Huancayo	Locarno	Ottawa	Zurich

SOLAR FLARES

NOVEMBER 1963

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURATION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT	MER DIST	MAGNITUDE PLACE REGION				TIME — U T	MEAS. AREA Sq. Deg	CORR. AREA Sq. Deg	
UCCLE	NOV 1963												
	01	0045	0110	NO FLARE		PATROL							
	01	0435	0440	NO FLARE		PATROL							
	01	0515	0520	NO FLARE		PATROL							
	01	0915	0940	NO FLARE		PATROL							
	01	0945	1105	NO FLARE		PATROL							
UCCLE	01	1201	1214	S01 W27			1-	3					
	01	1250	1320	NO FLARE		PATROL							
	02	0250	0625	NO FLARE		PATROL							
NIZAMIAH UCCLE	02	0635	0640	NO FLARE		PATROL							
	02	0930 E	0946	S24 W31	18 D		2	2	0930	2.43	7.67	1.70	
	02	1029	1052	S00 W40			1-	3					
	02	1610	1615	NO FLARE		PATROL							
BUCHAREST BUCHAREST BUCHAREST UCCLE BUCHAREST BUCHAREST	03	2130	2155	NO FLARE		PATROL							
	04	0300	0350	NO FLARE		PATROL							
	04	0425	0505	NO FLARE		PATROL							
	04	0600	0650	NO FLARE		PATROL							
	04	0714 E	0730 D	N08 E51			1-	3					
	04	0720 E	0746 D	S00 W65			1-	3					
	04	0823 E	0857 D	S00 W66			1-	3					
	04	0853 E	0908 D	N08 E55			1-	3					
	04	0924 E	0949 D	S00 W66			1-	3					
	04	0943 E	0953 D	N08 E51			1-	3					
UCCLE UCCLE UCCLE UCCLE	04	1100	1150	NO FLARE		PATROL							
	04	1155	1230	NO FLARE		PATROL							
	05	0200	0220	NO FLARE		PATROL							
	05	0245	0350	NO FLARE		PATROL							
	05	0430	0625	NO FLARE		PATROL							
	05	0904	0926	N08 E44			1-	3					
	05	1204	1232	S01 W88			1-	3					
	05	1214	1225	S00 W90			1-	3					
	05	1236	1317	1239 D		S01 W88	1-	3					
	06	0010	0045	NO FLARE		PATROL							
UCCLE UCCLE UCCLE UCCLE	06	0240	0245	NO FLARE		PATROL							
	06	2105	2110	NO FLARE		PATROL							
	06	2200	2220	NO FLARE		PATROL							
	07	0000	0005	NO FLARE		PATROL							
	07	0010	0230	NO FLARE		PATROL							
	07	0235	0240	NO FLARE		PATROL							
	07	0645	0655	NO FLARE		PATROL							
	08	0030	0140	NO FLARE		PATROL							
	10	2355	2400	NO FLARE		PATROL							
	11	0005	0345	NO FLARE		PATROL							

SOLAR FLARES

NOVEMBER 1963

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	IM POR- TANCE	OBS. COND.	TIME — U T	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT		
		START	END	APPROX. LAT.	MER DIST					McMATH PLAGE REGION	MEAS. AREA Sq Deg	CORR AREA Sq Deg		MAX WIDTH H _o	MAX INT °
KODAIKNL	NOV 1963														
	11	0350	0355	NO FLARE	PATROL										
	12	0245	0250	NO FLARE	PATROL										
	12	0530	0600	NO FLARE	PATROL										
	13	0200	0540	NO FLARE	PATROL										
	13	0550	0600	NO FLARE	PATROL										
	13	1920	1940	NO FLARE	PATROL										
	13	2230	2250	NO FLARE	PATROL										
	13	2310	2320	NO FLARE	PATROL										
	13	2345	2400	NO FLARE	PATROL										
	14	0000	0100	NO FLARE	PATROL										
	14	0315	0335	NO FLARE	PATROL										
	14	0345	0435	NO FLARE	PATROL										
	14	0520 E	0522 D	NO FLARE	N13 W10		1-	1	0520			1.68			
UCCLE	14	0835	0805	NO FLARE	PATROL										
	14	0835	0840	NO FLARE	PATROL										
	14	1055	1100	NO FLARE	PATROL										
	14	1340	1352	NO FLARE	S13 E88		1-	3							
	14	1405	1420	NO FLARE	PATROL										
	14	1425	1430	NO FLARE	PATROL										
	14	1440	1505	NO FLARE	PATROL										
	14	1530	1535	NO FLARE	PATROL										
	14	1810	1815	NO FLARE	PATROL										
	15	0215	0230	NO FLARE	PATROL										
	15	0240	0300	NO FLARE	PATROL										
	15	0305	0310	NO FLARE	PATROL										
	15	0355	0400	NO FLARE	PATROL										
	15	0435	0535	NO FLARE	PATROL										
15	1315	1330	NO FLARE	PATROL											
CRIMEE TACHKENT	17	0530	0600	NO FLARE	PATROL										
	17	1005	1020	NO FLARE	PATROL										
	17	1040	1120	NO FLARE	PATROL										
	17	1130	1355	NO FLARE	PATROL										
	17	1400	1425	NO FLARE	PATROL										
	18	0000	0030	NO FLARE	PATROL										
	18	0200	0210	NO FLARE	PATROL										
	18	0300	0600	NO FLARE	PATROL										
	18	1300	1335	NO FLARE	PATROL										
	18	1400	1405	NO FLARE	PATROL										
	19	0000	0230	NO FLARE	PATROL										
	19	0315	0500	NO FLARE	PATROL										
	20	0200	0500	NO FLARE	PATROL										
	20	0600	0614 D	0603	N13 E35	7039	14 D	2	0603	3.15					
20	0601	0614	0605	N14 E37	7039	13	1	0607	1.64	2.00	1.80	55			

SOLAR FLARES

NOVEMBER 1963

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX LAT.	MER DIST				MCARTH UR PLACE REGION	TIME — U T	MEAS AREA Sq Deg	CORR. AREA Sq Deg	
ABASTUMANI	NOV 1963	20	0602	0608 E	0604	N14 E37	7039	1	3	2.25	2.94	55	S1-S-SWF
	20	1640	1650	NO FLARE									
	20	1700	1705	NO FLARE									
	20	1815	1825	NO FLARE									
	20	1935	2000	NO FLARE									
	20	2140	2310	NO FLARE									
	21	0005	0010	NO FLARE									
	21	0230	0500	NO FLARE									
	21	1410	1415	NO FLARE									
	21	1500	1635	NO FLARE									
ZURICH UCCLE	21	1945	2215	NO FLARE									S1-S-SWF
	21	2255	2335	NO FLARE									
	22	0215	0420	NO FLARE									
	22	1043 E	1108	1048	N06 E53	7047	1	2	1048		4.00		
	22	1329 E	1343 D	1332	N11 W06		1-	3					
	23	0030	0035	NO FLARE									
	23	0230	0250	NO FLARE									
	23	0320	0330	NO FLARE									
	23	0335	0340	NO FLARE									
	23	0450	0455	NO FLARE									
NIZAMIAH CAPETOWN	23	1046	1059	1052	S03 W52	7036	1+	2	1052	1.82	3.00	1.60	S1-S-SWF
	24	1202	1229	1203	N02 E30		1-		1203	1.30	1.50		
	25	0000	0220	NO FLARE									
	25	0535	0635	NO FLARE									
	26	1340	1355	NO FLARE									
	27	0550	0755	NO FLARE									
	27	0822 E	0833 D		N04 W05		1-	3					
	28	0425	0500	NO FLARE									
	28	0749	0755	0750	N05 W17		1-		0750	1.00	1.00		
	28	1406	1427 D	1407	N01 W28		1-		1407	1.20	1.30		
CAPETOWN CLIMAX	28	2117	2129 D		N15 W90		1-		2125	.40	2.00		G-SWF
	29	0155	0205	NO FLARE									
	29	0215	0225	NO FLARE									
	29	0235	0310	NO FLARE									
	29	0330	0500	NO FLARE									
	29	1648	1714	1659	N08 W40		1-			.20	.20		
	30	0200	0600	NO FLARE									
	30	1047 E	1109 D	1053	S10 E88		1-	3					
	30	1335	1340	NO FLARE									
	BUCHAREST	30											

COMMENCE - STANDARDS - BOLDER

SOLAR FLARES

NOVEMBER 1963

These flare reports are addenda to the November 1963 flares published in CRPL-F 232 B for December 1963.

ATHENS	ATHENS, GREECE	HONOLULU	HAWAII, USA	NERA	NEDERHORST den BERGH, NETHERLANDS
BAKOU	PIRCULI, USSR	IKOMASAN	KYOTO, JAPAN	NIZMIR	KRASNAYA PAKHRA, USSR
CAPETOWN	ROYAL OBSERVATORY, CAPE OF GOOD HOPE	KIEV KO	KIEV GAO, USSR	SAC PEAK	SACRAMENTO PEAK, N. MEX. USA
CAPRI F	CAPRI, ITALY (GERMAN)	KIEV KY	KIEV UNIVERSITY, USSR	SALTSJÖBADEN	STOCKHOLM, SWEDEN
CAPRI S	CAPRI, ITALY (SWEDISH)	LOCKHEED	LOS ANGELES, CALIF., USA	SCHAUINS	SCHAUINSLAND, GFR
CRINÉE	SIMEIZ, USSR	MCHATH	MCNATH-HULBERT	TACHKENT	TASHKENT, USSR
HERSTHONCEU	ROYAL GREENWICH OBSERVATORY, HERSTHONCEUX, ENGLAND	MOSCOU	PONTIAC, MICH., USA	WENDEL	WENDELSTEIN, GFR
HTR-PROVEN	HAUTE-PROVENCE	NEW SCHAUN FREIBURG, GFR	MOSCOM-GAISH, USSR		

ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

E = LESS THAN D = GREATER THAN U = APPROXIMATE □ = NOT REPORTED.

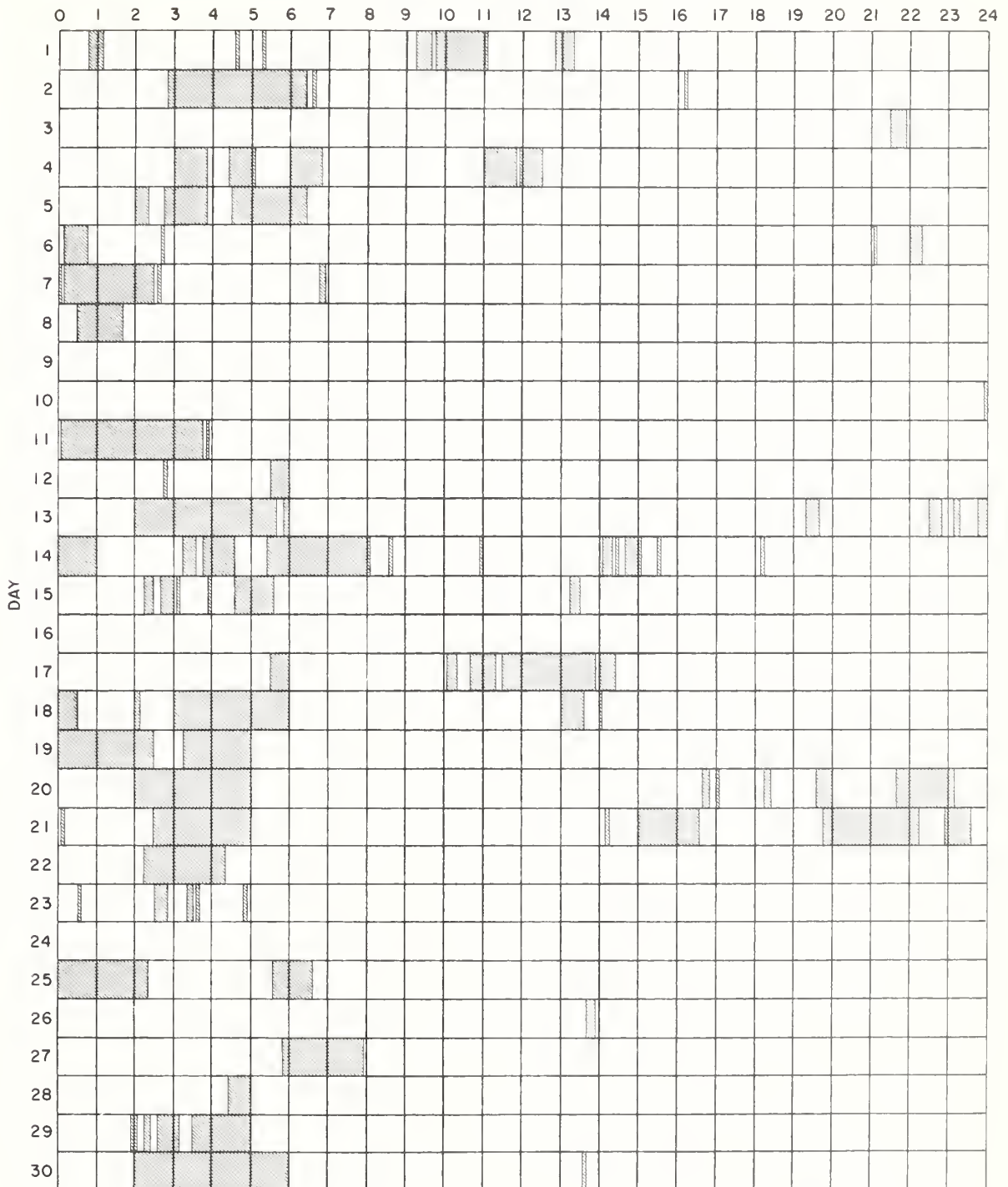
COMMERCE - STANDARDS - BOULDER

INTERVALS OF NO FLARE PATROL OBSERVATIONS

III

NOVEMBER 1963

HOUR-UT



Observatories Include:

Abastumani	Capetown	Haute-Provence	Kiev-KO	Nizamiah	Tackhent
Arcetri	Capri-F (German)	Herstmonceux	Kodaikanal	Nizmir	Uccle
Athenes	Capri-S (Swedish)	Huancayo	Lockheed	Ondrejov	Voroshilov
Bakou	Climax	Ikomasan	McMath-Hulbert	Ottawa	
Bucharest	Crimee	Istanbul	Mitaka	Sacramento Peak	

IONOSPHERIC EFFECTS OF SOLAR FLARES

SHORT WAVE RADIO FADEOUTS SUDDEN PHASE ANOMALIES
 SUDDEN COSMIC NOISE ABSORPTION SUDDEN ENHANCEMENTS OF SIGNAL
 SUDDEN ENHANCEMENTS OF ATMOSPHERICS SUDDEN FREQUENCY DEVIATIONS
 SOLAR NOISE BURSTS AT 18 Mc/s

JANUARY 1964

JAN. 1964	UNIVERSAL TIME			TYPE SWF IMP	IMPORTANCE						BUR	WIDE SPREAD INDEX	STATIONS	KNOWN FLARE
	START	END	MAX		ABS	SCNA	SEA	SPA	SES	SFD				
No sudden ionospheric disturbances for January 1964.														

COMMERCE - STANDARDS - BOULDER

RIOMETER EVENTS
(Provisional)

111n

JANUARY 1964

South Pole

26 Mc/s

JAN. 1964	START UT	END UT	MAX. UT	MAX. ABSORP. db, (tenths)	NO. OF PEAKS	JAN. 1964	START UT	END UT	MAX. UT	MAX. ABSORP. db, (tenths)	NO. OF PEAKS
2	0441	0328	0447	11	1	17	0805	1918	1541	9	2
2	0732	1458	1305	17	5	18	0159	0434	0217	13	2
2	1848	1952	1909	3	3	18	0938	1125	0959	4	1
3	0204	0355	0243	35	5	19	1450	1709	1604	12	1
3	0819	1611	1412	10	5	20	1021	1744	1431	5	2
3	1819	1950	1845	6	3	24	0341	0444	0358	7	2
4	0006	0345	0245	24	5	24	0946	2328	1446	7	2
4	1246	2008	1555	12	4	25	0044	0158	0109	10	2
6	0230	0359	0249	11	3	25	0602	0722	0613	4	1
7	0932	1624	1032	6	4	25	1857	1949	1940	3	1
7	1831	1941	1915	4	4	26	0212	0314	0220	13	1
8	0016	0054	0026	6	4	26	1241	2124	1950	6	4
9	0100	0204	0117	8	1	27	0116	0205	0133	23	2
9	1010	1019	1018	3	1	28	1916	1947	1932	5	1
10	0016	0217	0110	7	1	29	0620	1930	0958	10	3
10	0544	0742	0552	15	1	30	0304	0529	0311	5	3
10	1519	1744	1625	5	2	30	0740	1830	1434	12	3
10	2247	0107	2255	17	3	31	0856	2028	1105	23	2
11	1943	0308	0032	18	3						
13	0249	0800	0256	7	2						
14	0023	0126	0116	5	1						
15	0106	0133	0127	3	2						
16	0944	1230	1204	9	3						
16	2257	2309	2301	3	1						
17	0244	0324	0248	13	1						

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

FEBRUARY 1964

ARO - OTTAWA

2800 Mc/s

FEB. 1964	U R A N E	DESCRIPTIVE TYPE	START UT	DURATION HRS. MIN.	MEAN FLUX	MAXIMUM		REMARKS
						TIME	FLUX	
23	3	Simple 3	1822	11	1826	1	0.5	
23	3	Simple 3	1934	>26	1941	1.5	0.7	
28	3	Simple 3	1401	42	1410	2	1	
28	3	Simple 3	1531	1 36	Indet.	1	0.5	
28	3	Simple 3 A	1734	2 16	Indet.	1	0.5	
	1	Simple 1	1851	0.8	1851.2	2	1	

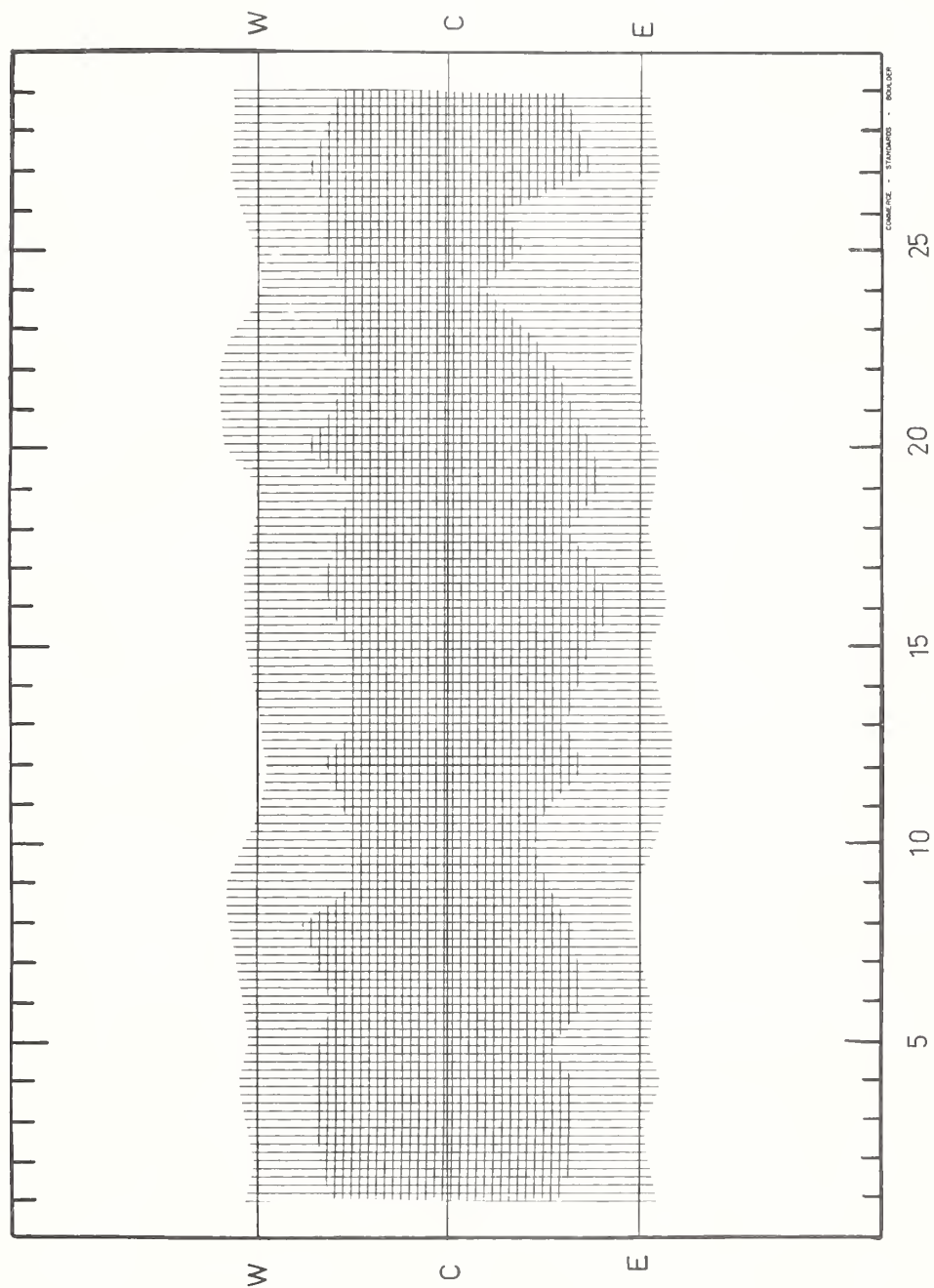
COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATIONS

FEBRUARY 1964

NANÇAY

169 Mc/s



FEBRUARY 1964

SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

FEBRUARY 1964

NBS BOULDER

108 Me/s

No Outstanding Occurrences were observed during February 1964.

NOMINAL TIMES OF OBSERVATION

FEBRUARY 1964

NBS BOULDER

108 Mc/s

Feb. 1964	HOURS OF OBSERVATION	UT	Feb. 1964	HOURS OF OBSERVATION	UT	
1	1414-0004	1636-1825	16	1357-0022	2025-2040 1745-1758	
2	1413-0005		17	1356-2326		
3	1412-0006		18	1605-0024		
4	1411-0008		19	1353-0025		
5	1410-0009		20	1352-0026		
6	1409-0010	21	1350-0028	2025-2040 1745-1758		
7	1408-0011	22	1349-0029			
8	1407-0012	23	2230-0030			
9	1406-0014	24	1346-0031			
10	1404-0015	25	1345-0032			
11	1403-0016	26	1343-0033			2025-2040 1745-1758
12	1402-0017	27	1342-0034			
13	1401-0018	28	1340-0036			
14	1400-0019	29	1339-0037			
15	1358-0021	1520-1529; 1805-1826				

SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

IVd

FEBRUARY 1964

High Altitude Observatory
Boulder

7.6-41 Mc/s

Date FEB. 1964	Bursts			Frequency Range (Mc/s)
	Type	Time (U.T.)	Inten- sity	
14 Feb	III	1627:30-1628	1-	26-41
23	II	1902:45-1915:45	1	19-37
29	III	1745-1746:45	1	22-40
	III	1752-1752:15	1-	32-40

COMMERCE - STANDARDS - BOULDER

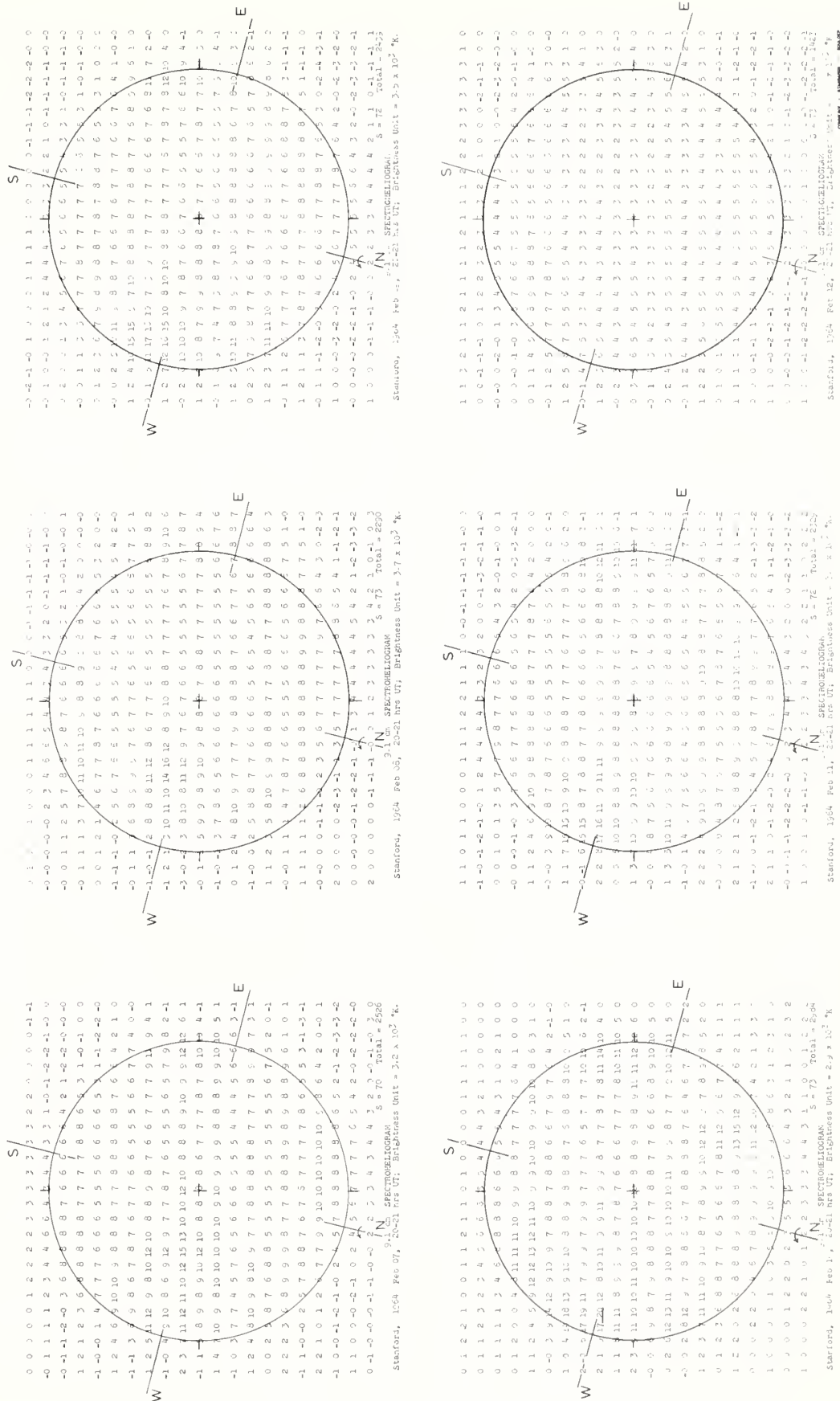
Beginning with February 1964, the Boulder spectro-
graphic data times are given in hours, minutes and
seconds to the nearest 15 seconds.

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

FEBRUARY 1964

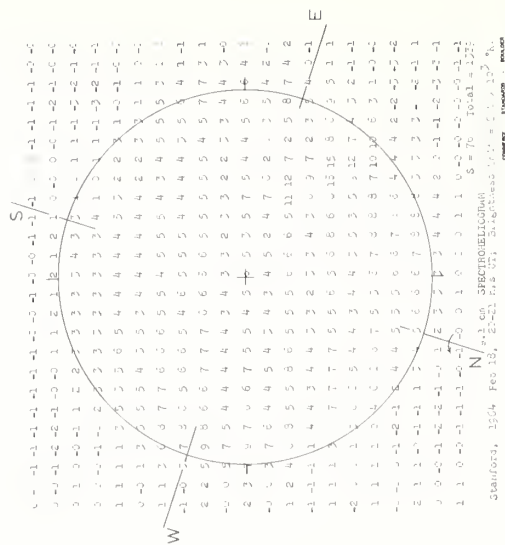
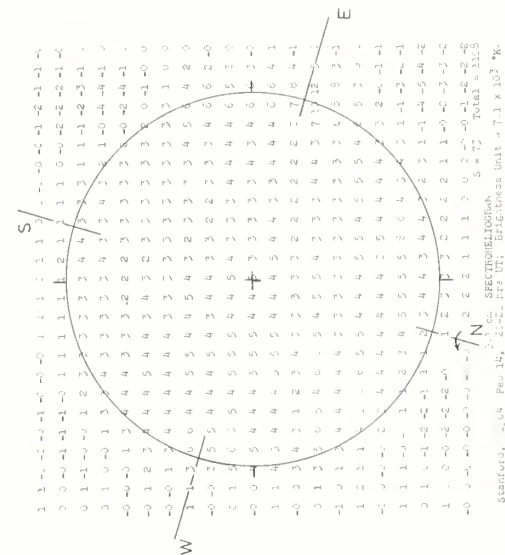
STANFORD

9.1 cm



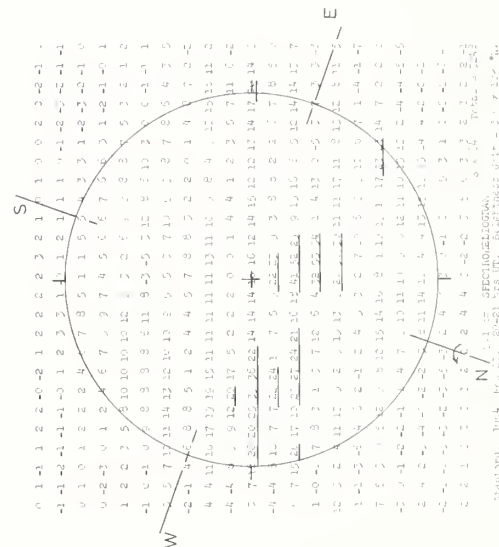
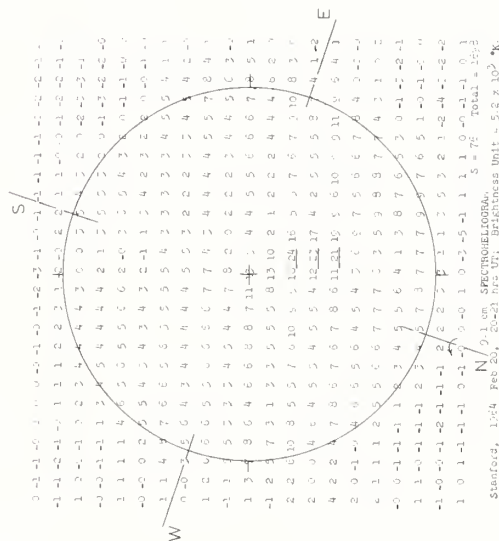
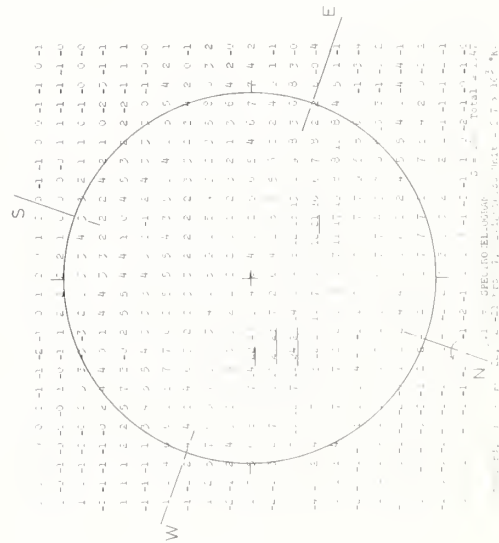
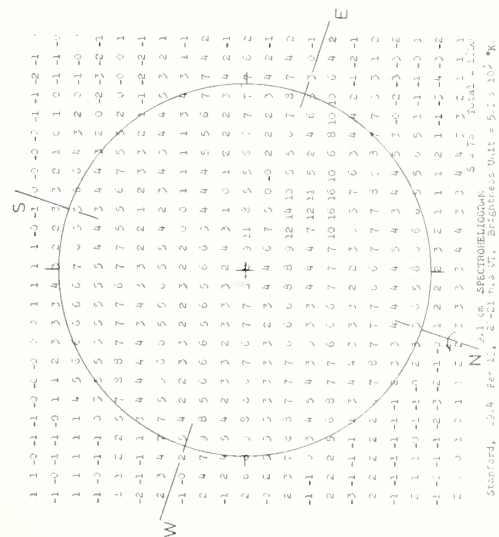
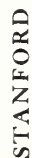
FEBRUARY 1964

9.1 cm



Stanford, 1964 Feb 13, 27-28 N.S. 171; 24.46000000 171.1 = 27.20000000 171.1

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

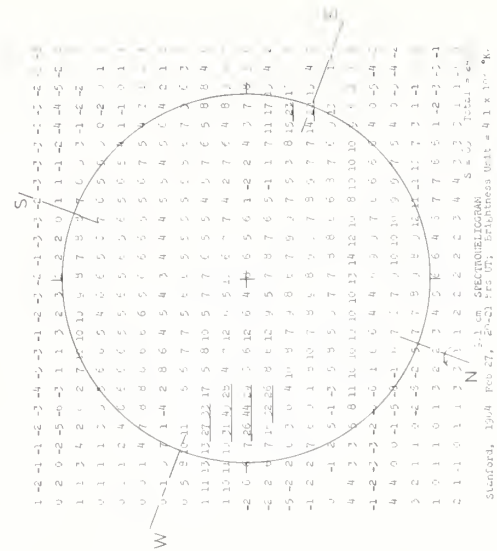
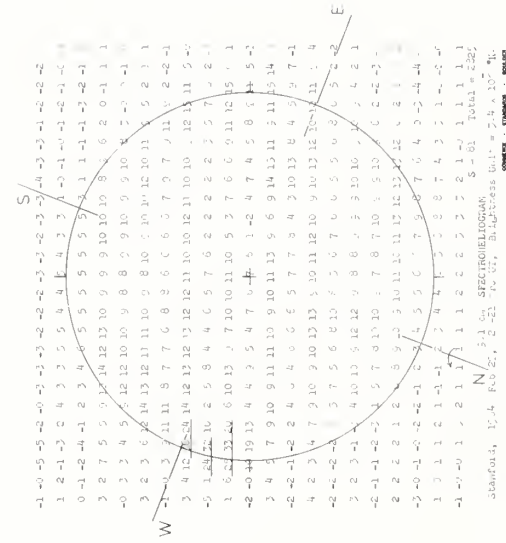
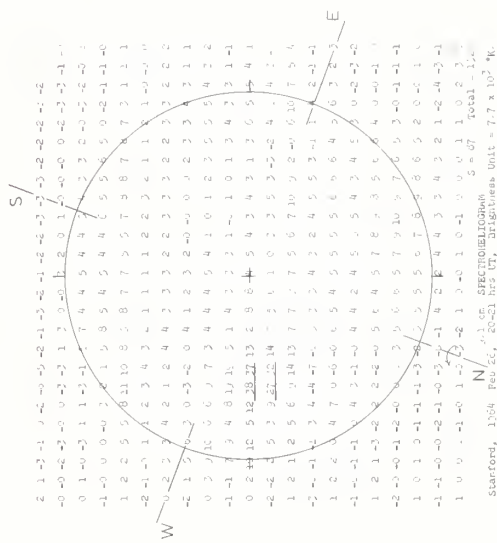
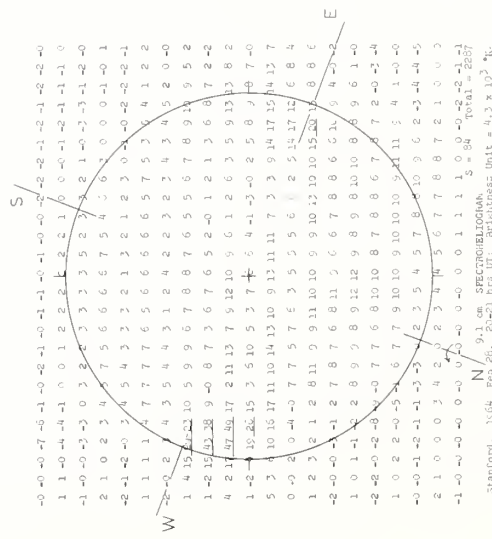
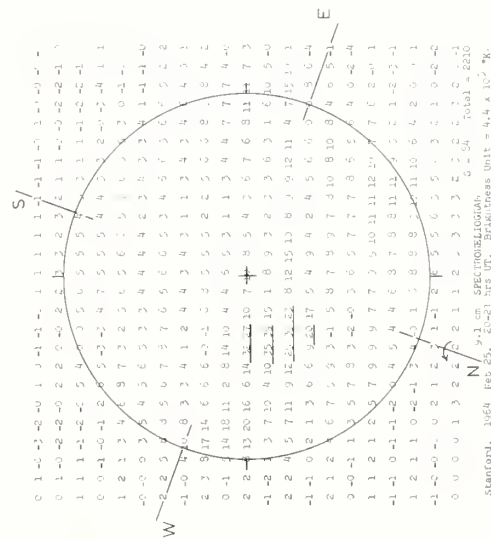


SOLAR RADIO EMISSION SPECTROHELIOGRAMS

FEBRUARY 1961

STANFORD

9.1 cm



Difficulty was experienced with the antenna during February resulting in maps of widely varying brightness. Coupled with this, there was a receiver malfunction on some days resulting in non-uniform brightness over a single map. Maps could not be obtained on February 17 and February 21.

COSMIC RAY INDICES

(Climax Neutron Monitor)

IGC Station B 305

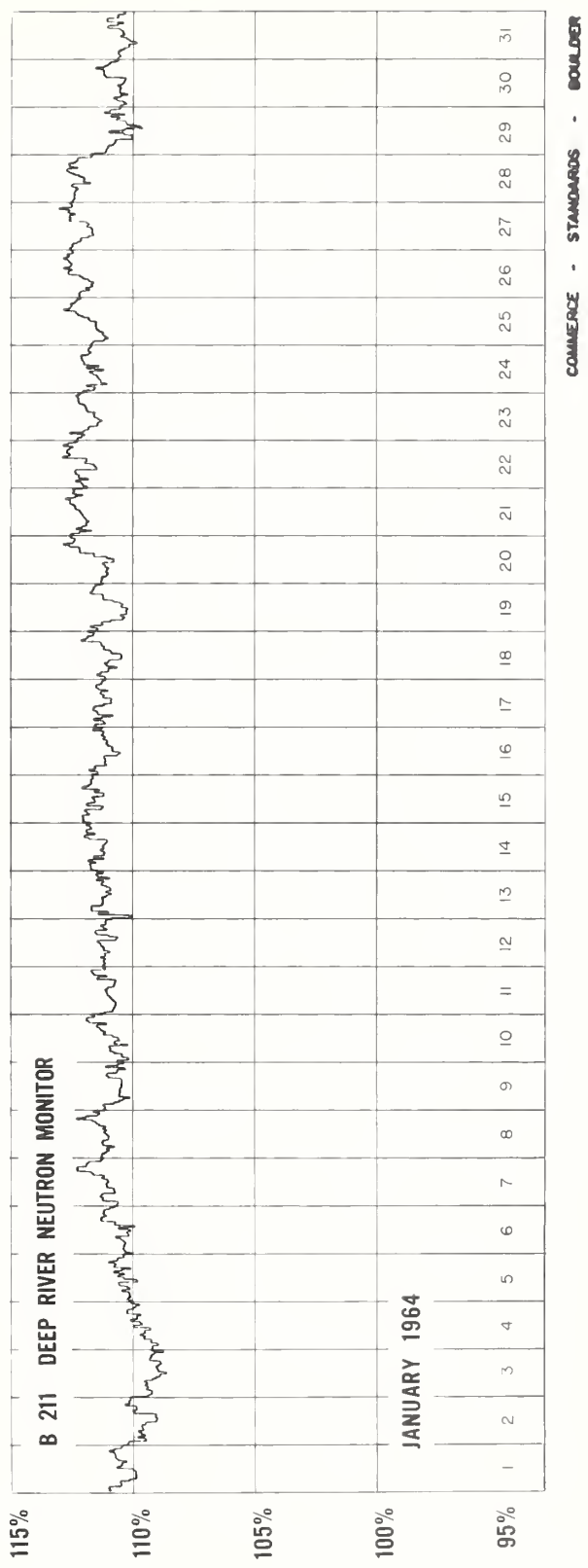
JANUARY 1964

Jan. 1964	Daily average counts/hr*	Jan. 1964	Daily average counts/hr*
1	3224.4	16	3244.3
2	3227.2	17	3246.1
3	3196.4	18	3251.9
4	3198.7	19	3255.5
5	3214.0	20	3239.7
6	3230.0	21	3258.4
7	3259.6	22	3272.8
8	3255.2	23	3263.4
9	3231.4	24	3254.2
10	3225.8	25	3236.8
11	3238.2	26	3238.7
12	3233.2	27	3243.2
13	3243.6	28	3245.8
14	3252.8	29	3227.3
15	3256.1	30	3219.8
		31	3210.0

* Scaling Factor 128

COMMERCE - STANDARDS - BOULDER

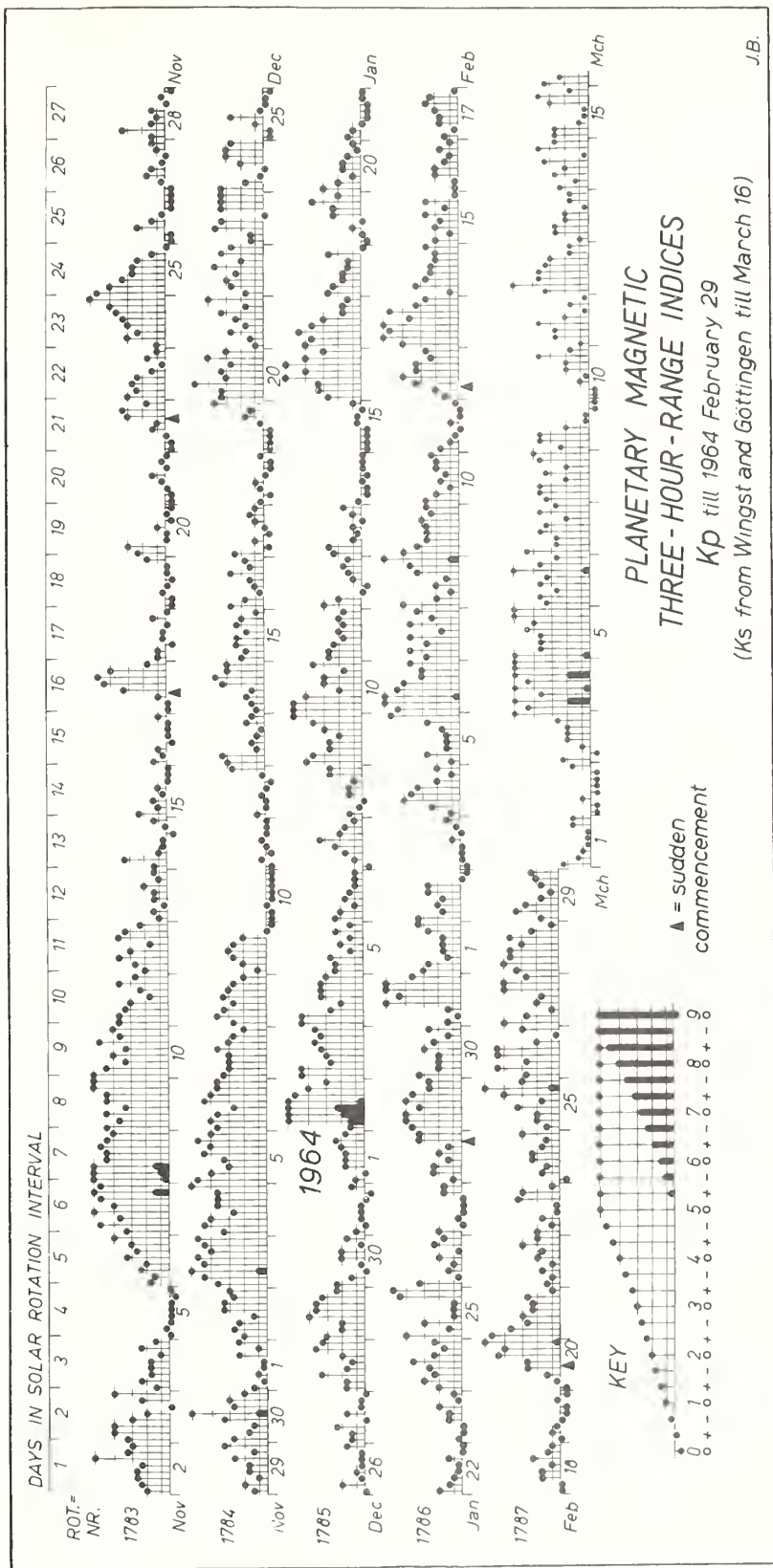
COSMIC RAY INDICES
(Pressure Corrected Hourly Totals)



GEOMAGNETIC ACTIVITY INDICES

JANUARY 1964

Jan. 1964	C	Values Kp								Sum	Ap	Final Selected Days	
		Three hour Gr. interval											
		1	2	3	4	5	6	7	8				
1	0.4	1o	0+	2-	2-	2-	2o	2+	2-	12+	6	Five Quiet	
2	1.6	1+	6o	6+	7-	5+	5-	4o	3o	37+	53		
3	1.1	4+	4+	3-	3o	3+	4-	3+	4-	28+	21		
4	0.9	4+	4+	3-	2o	3+	3+	3+	3o	26+	19		14
5	0.4	2+	2+	3-	1+	2o	1+	2+	1+	16-	8		15
6	0.1	2+	2o	1o	2-	1+	1o	1o	1o	11+	5	21	
7	0.5	0o	1o	2-	2+	3+	2o	2-	1o	13o	7	22	
8	0.5	1+	1-	0+	1+	1+	1o	3-	3-	11+	6	27	
9	1.1	4o	4-	3-	3-	2o	3o	4-	5-	26+	20		
10	1.0	5-	5-	4o	2o	3o	3o	2-	4-	27-	21		
11	0.2	3-	3-	2+	2-	2o	2-	2o	2-	17-	8	Five Disturbed	
12	0.2	3o	2o	0+	0o	1o	1+	2-	1+	11-	6		
13	0.1	2+	3-	1o	1-	1o	0+	1o	2-	11-	6		
14	0.0	1-	0o	0o	0+	0o	0+	0+	0+	2o	1		2
15	0.0	0o	0o	0o	0o	1-	1-	0+	1o	3-	2		3
16	1.2	3-	3+	3+	5o	4o	5o	4o	3o	30+	27	10	
17	0.6	4o	4-	4+	4-	3o	2-	2-	1+	23+	17	16	
18	0.5	3-	2+	2-	2-	1+	1+	3-	0+	14o	7	31	
19	0.5	0o	0+	1o	0+	2+	2+	4-	2o	12o	7		
20	0.2	3o	2o	1o	2-	2-	1+	1-	1o	12+	6		
21	0.0	1+	1o	0+	0o	0o	0o	0+	0+	3+	2	Ten Quiet	
22	0.1	2o	1+	1o	1-	1-	1+	0+	0+	8-	4		
23	0.3	1-	0+	0+	1+	1+	2o	1-	1o	8-	4		
24	0.9	2o	3o	2+	3-	4-	2+	2-	2+	20o	11		6
25	1.0	4o	1+	3o	1o	1o	1o	4+	5-	20+	16		8
26	0.4	3+	1-	1+	1o	2o	1-	2+	2-	13o	7	12	
27	0.3	2o	0+	1-	0+	0+	0+	2-	2-	7+	4	13	
28	0.7	1o	2+	2+	1+	2o	1+	3+	3+	17o	9	14	
29	1.1	4-	4o	4o	3+	4o	4-	3-	3-	28o	21	15	
30	0.6	3+	2o	2o	2o	3o	2+	1+	3-	19-	10	21	
31	1.2	1+	1-	1+	5o	4+	5o	5o	4-	26+	26	22	
												23	
												27	
Mean:	0.57									Mean:	12		



CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

JANUARY 1961

NORTH ATLANTIC

NORTH PACIFIC

JAN 1964	NORTH ATLANTIC 6-HOURLY QUALITY FIGURES				SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF:				WHOLE DAY INDEX		ADVANCE FORECASTS (L-REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY:				GEOMAGNETIC K _p		NORTH PACIFIC 8-HOURLY QUALITY FIGURES				SHORT-TERM FORECASTS ISSUED AT				WHOLE DAY INDEX		ADVANCE FORECASTS (L-REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY:				GEOMAGNETIC K _p																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	00 06 12 18 TO 12 18 24				00 06 12 18				12-17 DAYS FINAL J ₅ SDW J		18-17 DAYS FINAL J ₅ SDW J		03 11 19 TO TO TO		02 09 18		12-17 DAYS FINAL J ₅ SDW J		03 11 19 TO TO TO		02 09 18		12-17 DAYS FINAL J ₅ SDW J		03 11 19 TO TO TO		02 09 18		12-17 DAYS FINAL J ₅ SDW J		03 11 19 TO TO TO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	00	06	12	18	00	06	12	18	12-17 DAYS FINAL J ₅ SDW J	18-17 DAYS FINAL J ₅ SDW J	03	11	19	02	09	18	12-17 DAYS FINAL J ₅ SDW J	18-17 DAYS FINAL J ₅ SDW J	03	11	19	02	09	18	12-17 DAYS FINAL J ₅ SDW J	18-17 DAYS FINAL J ₅ SDW J	03	11	19	02	09	18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
01	4-	40	60	5+	4	4	6	5	4	4	6	7	7	6	6	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

COMMERCE - STANDARDS - BOULDER

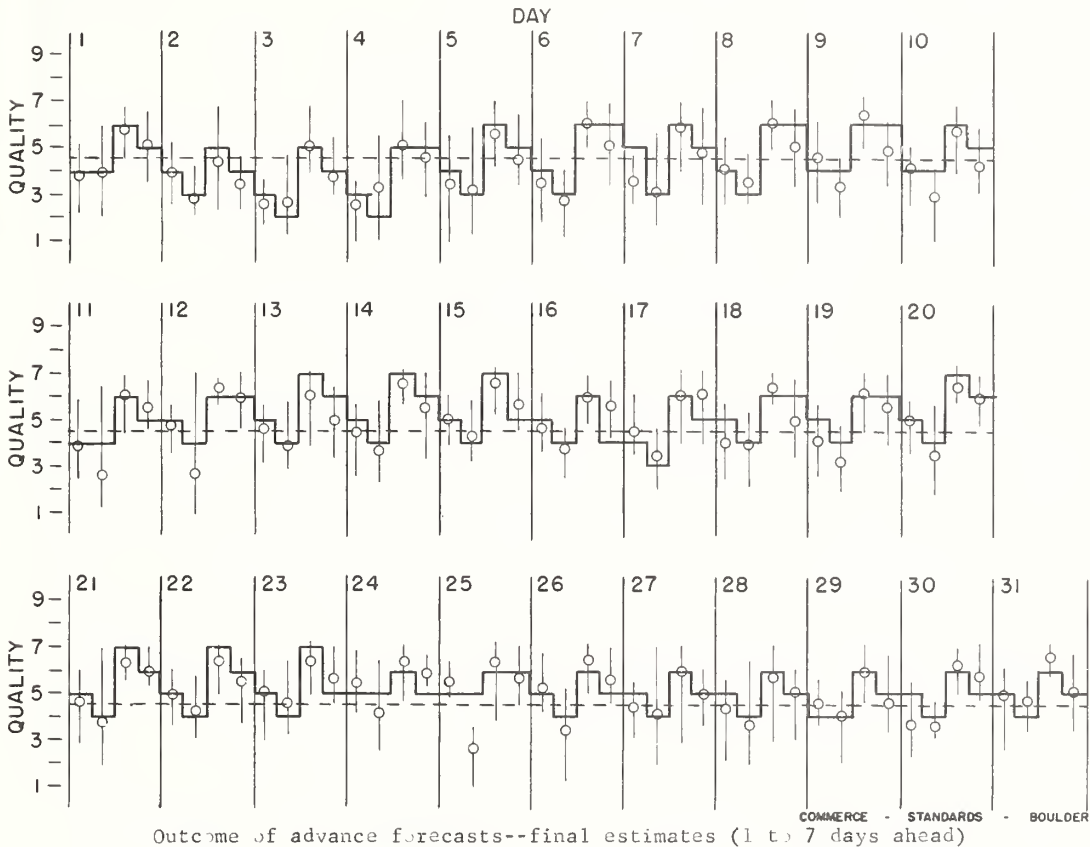
CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS VIIb

NORTH ATLANTIC

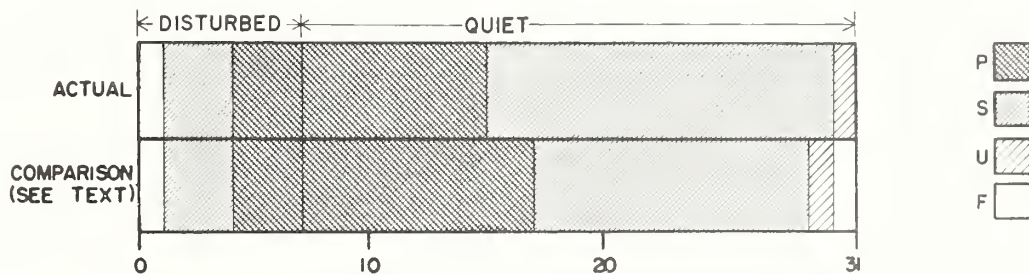
JANUARY 1964

— Short-term forecast
○ Quality figure

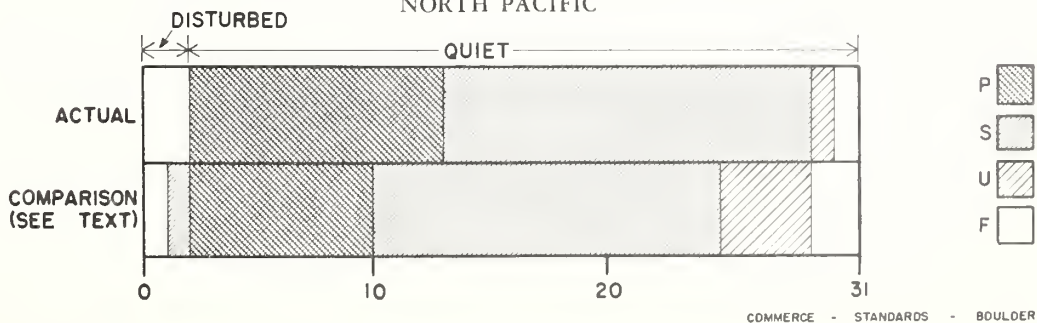
| Range of reports



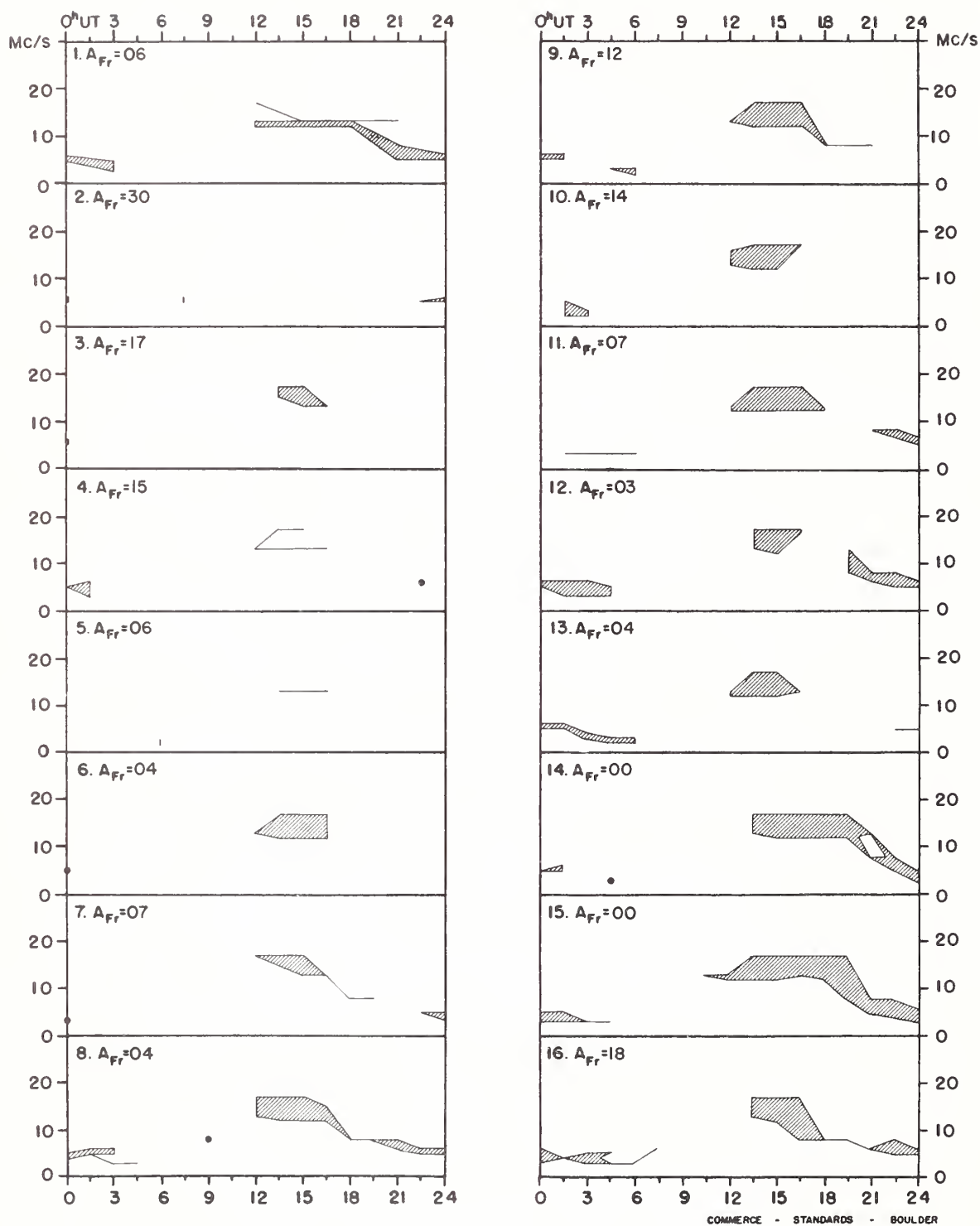
NORTH ATLANTIC



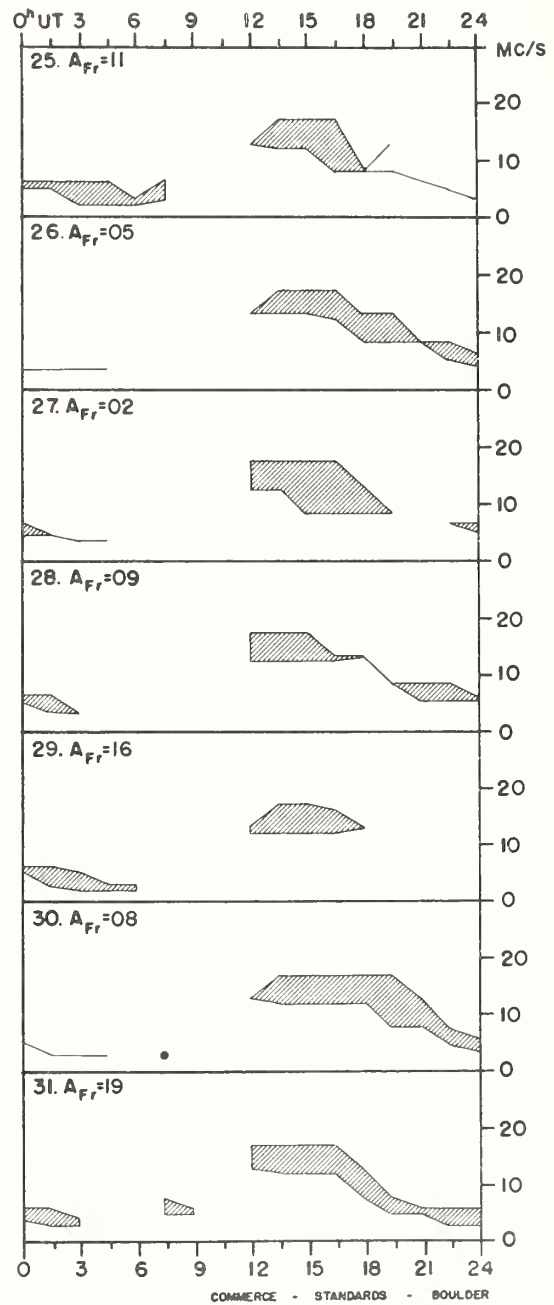
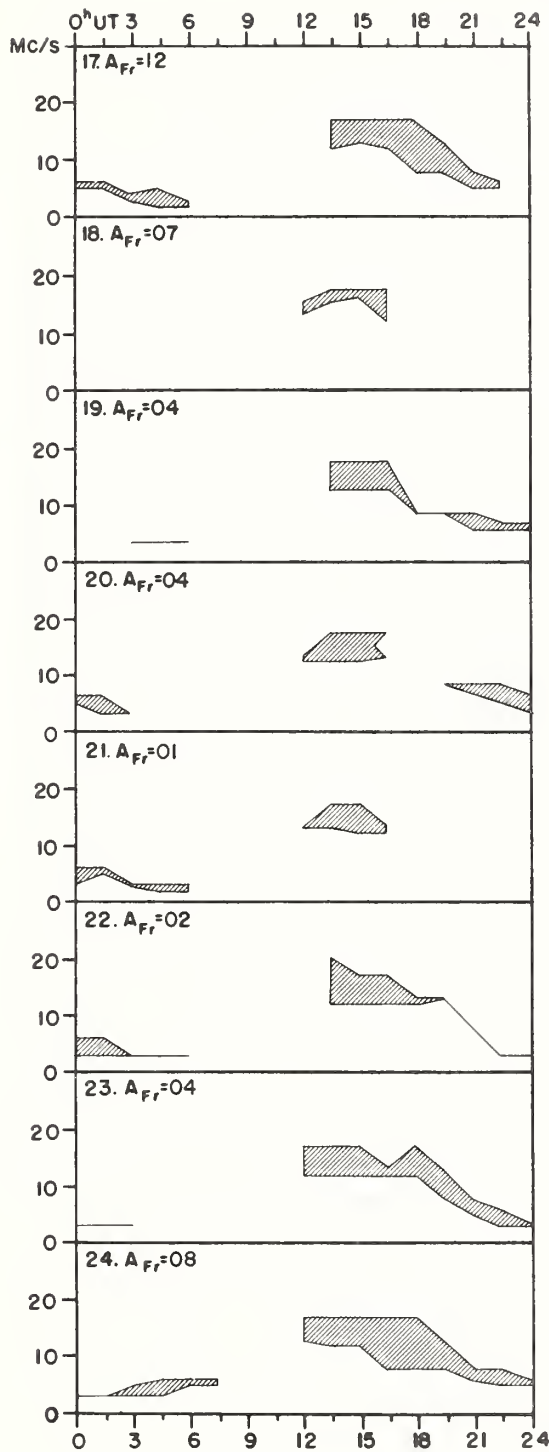
NORTH PACIFIC



JANUARY 1961



JANUARY 1964



Adapted from Observations by Deutsches Bundespost

IQSY ALERT PERIODS
INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE

FEBRUARY 1964

FEB 1964	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT			
			NO.	TYPE	TIMING	ELABORATION
4	0400	Ft. Belvoir, Magnetic Storm 13/03XXZ	34	Solar Calm	Exists	
13	1825					
20	0400		35	Magnetic Calm	Exists	
23	0400		36	Solar Activity	Exists	
24	0400		37	Solar Activity	Exists	
25	0400		38	Solar Activity	Exists	

COMMERCE - STANDARDS - BOULDER

On dates not listed above, the World-Wide Alert message was "IQSY GEOALERT NIL".

